TR/MV1/13   Test Booklet Series

TEST BOOKLET
GENERAL ABILITY TEST

A

_____
(Signature of the Candidate)

_____
(Invigilator's Signature)

Time allowed : Two hours   **Maximum Marks : 100**

INSTRUCTIONS

1. IMMEDIATELY AFTER THE COMMENCEMENT OF THE EXAMINATION, YOU SHOULD CHECK THAT THIS TEST BOOKLET DOES NOT HAVE ANY UNPRINTED OR TORN OR MISSING PAGES OR ITEMS ETC. IF SO, GET IT REPLACED BY A COMPLETE TEST BOOKLET.

2. **ENCODE CLEARLY THE TEST BOOKLET SERIES A IN THE APPROPRIATE PLACE IN THE ANSWER SHEET BY BLACK BALL POINT PEN ONLY.**

3. This Test Booklet contains 100 items (questions). Each question, carrying 1 (one) mark only, has four responses (answers). You will select the response which you want to mark on the Answer Sheet. In case you feel that there is more than one correct response, mark the response which you consider the most appropriate. In any case, choose ONLY ONE response for each item.

4. You have to mark all your responses by **Black Ball Point Pen only** on the separate Answer Sheet provided. See directions in the Answer Sheet.

5. All items carry equal marks.

6. Before you proceed to mark in the Answer Sheet, the responses to various items in the Test Booklet, you have to fill in some particulars in the Answer Sheet as per instruction sent to you with your Admission Certificate.

7. After you have completed filling in responses on the Answer Sheet and the Examination is completed, you should handover the Answer Sheet to the Invigilator only. You are permitted to take the Test Booklet with you.

8. Sheets for rough work are appended on the Test Booklet at the end.

9. **Penalty for wrong/multiple answers :**

    (i) For each question for which a wrong answer / multiple answer has been given by the candidate, a ½(half) mark will be deducted as penalty.

    (ii) If a question is left blank, i.e. no answer is given by the candidate ; there will be **no penalty** for that question.

DO NOT OPEN THIS TEST BOOKLET TILL YOU ARE ASKED TO DO SO.

Four options are given against each of the following questions. Select the best / correct option from among the four options and encode in the answer sheet by using **Black Ball Point Pen** only as per example given below :

Example : The capital of India is :

(A) Delhi

(B) New Delhi

(C) Indraprastha

(D) None of these

PART - I

1. When did Rabindra Nath Tagore first come to Tripura ?

(A) 1890

(B) 1900

(C) 1905

(D) None of these

2. Name the first high school of Tripura.

(A) Umakanta Academy

(B) Netaji Subhash Vidya Niketan

(C) Maharani Tulshi Bati Girls' H. S. School

(D) Bodhjang Boys' H. S. School

3. How many seats are reserved for Scheduled Tribe candidates in the 60-member Tripura Legislative Assembly ?

(A) 15

(B) 20

(C) 10

(D) 12

4. Who was the first woman to be elected as a member of Tripura Legislative Assembly ?

(A) Basana Chakraborty

(B) Bibhu Kumari Devi

(C) Ela Bhattacharjee

(D) None of them

5. India shares the longest border with

(A) Afghanistan

(B) Pakistan

(C) Bangladesh

(D) China

6. The largest state in India, in terms of area, is

(A) Rajasthan

(B) Maharashtra

(C) Madhya Pradesh

(D) Uttar Pradesh

7. Which of the following cities hosted the Nuclear Security Summit in 2012 ?

   (A) Tokyo

   (B) Seoul

   (C) Paris

   (D) New York

8. State having lowest area under forest cover is

   (A) Madhya Pradesh

   (B) Maharashtra

   (C) Haryana

   (D) Goa

9. Who said, "I am not an Athenian, nor a Greek, but a citizen of the world" ?

   (A) Alexander the Great

   (B) Socrates

   (C) Shelley

   (D) Akbar the Great

10. Which country is the leading producer of gold ?

   (A) Greece

   (B) Brazil

   (C) South Africa

   (D) Sri Lanka

11. The pH of fresh milk is 6. When it turns sour, the pH

   (A) remains the same, i.e. 6

   (B) becomes greater than 6

   (C) becomes neutral, i.e. 7

   (D) becomes less than 6

12. Which part of the body controls all the other organs ?

   (A) Heart

   (B) Eyes

   (C) Brain

   (D) Stomach

13. Non-green plants like mushroom can not make their own food because

   (A) They are too small

   (B) They lack chlorophyll

   (C) They lack phototropism

   (D) They lack roots to suck water

14. The pyramid of biomass was first studied in which ecosystem ?

   (A) Pond

   (B) Forest

   (C) Grass-land

   (D) Mangrove

15. The LCM of two numbers is 2079 and their HCF is 27. If one of the number is 189, find the other.

(A) 1863

(B) 1890

(C) 297

(D) 216

16. Ram's salary is increased from Rs. 630 to Rs. 700. Find the increase percent.

(A) 70%

(B) $11\frac{1}{9}\%$

(C) 9%

(D) 9½%

17. The age of the father 3 years ago was 7 times the age of his son. At present the father's age is five times that of his son. What is the present age of the father ?

(A) 45

(B) 40

(C) 50

(D) 55

18. A man buys a toy for Rs. 25 and sells it for Rs. 30. Find his profit percent.

(A) 5%

(B) 20%

(C) 45%

(D) 25%

19. Who wrote the book "Romance with Life" ?

(A) J. K. Rowling

(B) Dr. A. P. J. Abdul Kalam

(C) Dr. Amartya Sen

(D) Dev Anand

20. Who is the author of the book "My Experiments with Truth" ?

(A) Mahatma Gandhi

(B) Jawahar Lal Nehru

(C) Taslima Nasreen

(D) Mrs. Indira Gandhi

21. Number of high courts in India has gone upto 24 from 21 after opening up of the high courts in

(A) Tripura, Maghalaya, Manipur

(B) Tripura, Manipur, Arunachal Pradesh

(C) Tripura, Mizoram, Manipur

(D) None of these

22. Tripura Government, on 18th November, 2012 announced its plan to set up two reserves for preservation of one of the following species :

(A) Tiger

(B) Elephant

(C) Lion

(D) Monkey

23. Tripura Industrial Development Corporation (TIDC) on 28th May, 2012 announced to set up one Software Technology Park in Tripura which in North-East India would be the

(A) Second

(B) Fourth

(C) Fifth

(D) First

24. On January, 2012 Planning Commission of India approved investment clearance for the scheme

(A) Rudra Sagar Drainage Development Scheme

(B) Nalakata Project Development

(C) Kamala Sagar Beautification Project

(D) None of the above

25. Gas based Power Project at Palatana, Gumti district, Tripura set up by OTPC would be the largest power project of the the North-Eastern region having capacity to generate power

(A) 794.8 MW

(B) 726.6 MW

(C) 650 MW

(D) 589.7 MW

26. First integrated Tea Park of the North East region is in

(A) Tripura

(B) Assam

(C) Meghalaya

(D) Arunachal Pradesh

27. A new museum gallery on North-East bio-diversity has been set up in

(A) Dimapur

(B) Shillong

(C) Itanagar

(D) Dispur

28. The Motor Vehicles Act, 1988 came into force on

   (A) 21st March, 1988

   (B) 1st July, 1989

   (C) 3rd June, 1988

   (D) 2nd April, 1990

29. Brahmaputra enters India first at

   (A) Arunachal Pradesh

   (B) Assam

   (C) Meghalaya

   (D) Tripura

30. Barak is the principal river of

   (A) Manipur

   (B) Meghalaya

   (C) Mizoram

   (D) Assam

31. What is the minimum age required under law to drive a transport vehicle in any public place ?

   (A) 20 years

   (B) 18 years

   (C) 21 years

   (D) 25 years

32. The 26th North East Games were held in 2012 in :

   (A) Mizoram

   (B) Manipur

   (C) Nagaland

   (D) Meghalaya

33. What is the maximum punishment prescribed under the Motor Vehicles Act, 1988 for driving vehicles without holding an effective driving licence ?

   (A) 6 months imprisonment or a fine of Rs. 1000 or both

   (B) 8 months imprisonment or a fine of Rs. 1500 or both

   (C) 3 months imprisonment or a fine of Rs. 500 or both

   (D) 2 months imprisonment or a fine of Rs. 400 or both

34. The Railways, in Februray, 2013 announced its plans to complete the world's highest arch-shaped rail bridge by 2016 over the river

   (A) Ravi

   (B) Chenab

   (C) Brahmaputra

   (D) Sutlej

35. Which one of the following is the community from which the President of India can nominate two members to Lok Sabha ?

   (A) Buddhists

   (B) Jains

   (C) Anglo-Indians

   (D) Parsis

36. The highly decorated city of the world is

   (A) Berlin

   (B) Florence

   (C) Venice

   (D) Tokyo

37. In which of the following countries was a new type of rice called 'Slim Rice' made from a water soluble vegetable fibre, introduced in February, 2013 ?

   (A) Thailand

   (B) Britain

   (C) India

   (D) Japan

38. 'Air Asia' is a carrier of which country ?

   (A) Japan

   (B) Malaysia

   (C) South Korea

   (D) Singapore

39. On December 15, 2012 India won the 3rd World Cup Tournament for

   (A) Hockey

   (B) Kabadi

   (C) Basket Ball

   (D) None of these

40. Which country, in December, 2012 announced plans to replace the paper money with plastic bank notes ?

   (A) Russia

   (B) Switzerland

   (C) Britain

   (D) Germany

TR/MVI/13-200

(8)

41. The resultant of forces acting on a body will be zero if the body

(A) rotates with uniform deceleration

(B) rotates with uniform acceleration

(C) does not rotate and remain stationary

(D) None of the above

42. The inability of a body to change its state of rest or uniform motion along a straight line is called its

(A) momentum

(B) velocity

(C) acceleration

(D) inertia

43. After reaching the yielding stage while testing a mild steel specimen strain

(A) becomes constant

(B) strain starts decreasing

(C) increasing without any increase in load

(D) None of the above

44. Poisson's ratio is

(A) Ratio of stress and strain

(B) Ratio of modules of elasticity and strain

(C) Ratio of lateral strain and longitudinal strain

(D) Ratio of true stress and true strain

45. The shape of the bending moment diagram for a beam carrying no external load is

(A) Parabolic

(B) Linear

(C) Arc of a circle

(D) None of these

46. The rectilinear motion of a piston is converted into rotary motion by

(A) Piston

(B) Crank

(C) Cross head

(D) Connecting rod

47. In an automobile power is transmitted from gear box to differential through

(A) Knuckle joint

(B) Universal joint

(C) Oldham's coupling

(D) Hooke's joint

48. Cam size depends upon

(A) Cam operating speed

(B) Pitch circle

(C) Base circle

(D) Prime circle

49. The function of a governor is

(A) To control the engine speed

(B) To maintain the speed of engine constant

(C) To maintain constant piston speed of engine

(D) To maintain the speed of an engine within prescribed limits of varying load conditions.

50. For two meshing gears, their

(A) Number of teeth must be same

(B) Addendum must be same

(C) Clearance must be same

(D) Module must be same

51. The differential gear in the automobiles is used to

(A) Reduce speed

(B) Assist in changing speed

(C) Provide balancing

(D) Help in turning

52. A gear box in an automobile utilises

(A) Simple gear train

(B) Compound gear train

(C) Epicyclic gear train

(D) None of the above

TR/MVI/13-200

(10)

53. Spring Index is

(A) Load carrying capacity of a spring

(B) The ratio of maximum to minimum stress in a spring

(C) The ratio of coil diameter to wire diameter

(D) The ratio of free length to that under design load

54. The unit of dynamic viscosity is

(A) Newton-sec/m²

(B) Newton / m²-sec

(C) Kg m²/ sec

(D) m² / sec

55. The stress - strain relation of the Newtonian fluids is

(A) Linear

(B) Parabolic

(C) Hyperbolic

(D) Involutic

56. A rotameter is a device used to measure

(A) Velocity of fluid in pipes

(B) Vortex flow

(C) Flow of fluids

(D) Density of fluids

57. The continuity equation

(A) Expresses relationship between hydraulic parameters of flow

(B) Expresses the relation between work and energy

(C) Is a relation for the momentum per unit volume for two points on a streamline

(D) Relates the mass rate of flow along a streamline

58. Capillary action is due to the

(A) Viscosity of liquid

(B) Cohesion of liquid particles

(C) Surface tension

(D) Adhesion of liquid particles on the surface

59. The surface tension has the units

   (A) Newtons/m

   (B) Newtons/m^2

   (C) Newtons

   (D) None of the above

60. The science dealing with the study of phenomena at very low temperature is known as

   (A) Refrigenics

   (B) Cytogenics

   (C) Frozenics

   (D) Cryogenics

61. The sequence of processes that eventually returns the working substance to its original state is known as

   (A) Event

   (B) Process

   (C) Thermodynamic property

   (D) Thermodynamic cycle

62. An isentropic process is always

   (A) Irreversible and adiabatic

   (B) Reversible and isothermal

   (C) Reversible and adiabatic

   (D) None of the above

63. Work done in a free expansion process is

   (A) Zero

   (B) Minimum

   (C) Maximum

   (D) Negative

64. In the polytropic process equation PV^n = constant, if the value of n is infinitely large, the process is termed as

   (A) Constant volume

   (B) Constant pressure

   (C) Constant temperature

   (D) Adiabatic

65. Which of the following is not a property of the system ?

   (A) Temperature

   (B) Pressure

   (C) Specific volume

   (D) Heat

66. Second law of thermodynamics defines

   (A) Heat

   (B) Work

   (C) Internal energy

   (D) Entropy

67. In a thermal power plant thermodynamic cycle used is

   (A) Brayton

   (B) Carnot

   (C) Rankine

   (D) Erricson

68. Diesel cycle processes are

   (A) Isentropic, isothermal, constant volume, constant pressure

   (B) Two constant volume, one constant pressure, one isothermal

   (C) Two isentropic, one constant volume, one constant pressure

   (D) Two constant pressure, one constant volume, one isentropic

69. Transmission of heat by molecular collision is

   (A) Conduction

   (B) Convection

   (C) Radiation

   (D) Scattering

70. Heat is transferred by conduction, convection and radiation in

   (A) Insulated pipes carrying hot water

   (B) Refrigerator freezer coils

   (C) Melting of ice

   (D) Boiler furnaces

71. Which one of the following will radiate heat to a large extent ?

(A) White polished surface

(B) White rough surface

(C) Black rough surface

(D) Black polished surface

72. The conditions under which three phases of matter can coexist in equilibrium, is known as

(A) Absolute point

(B) Basic point

(C) Standard point

(D) Tripple point

73. Compression ratio in engine is

(A) $\dfrac{\text{Discharge pressure}}{\text{Suction pressure}}$

(B) $\dfrac{\text{Stroke volume}}{\text{Clearance volume}}$

(C) $\dfrac{\text{Stroke volume}}{\text{Stroke volume + clearance volume}}$

(D) None of the above

74. Intercooling in multistage compressor is done

(A) To cool the air at delivery

(B) To minimize the work of compressor

(C) To supply air at two different pressures for use

(D) To cool air during compression

75. Ignition quality of diesel fuel is expressed by

(A) Octane number

(B) Cetane number

(C) Carbon percentage

(D) Calorific value

76. Flash point of a liquid is the temperature at which

(A) The fuel emits vapours at a rate which produces an inflammable mixture with air

(B) The fuel spontaneously ignites

(C) The fuel ignites with clearly visible flash

(D) Fuel vaporises at the prescribed rate

77. The purpose of supercharging an engine is

(A) To increase the power output of engine

(B) To reduce specific fuel consumption

(C) To reduce the noise of engine

(D) To improve cooling of cylinders

78. The knocking tendency in a compression ignition engine for a given fuel will

(A) Enhance by reducing compression ratio

(B) Enhance by increasing compression ratio

(C) Increase to certain limits and then no change

(D) None of the above

79. Which fuel has maximum resistance to detonation ?

(A) Toluene

(B) Benzene

(C) Iso-octane

(D) n-Heptane

80. In a bomb calorimeter the fuel to be tested is burnt

(A) at constant volume

(B) at constant pressure

(C) in open atmosphere

(D) at constant temperature

81. Heating of dry steam above saturation temperature is known as

(A) Enthalpy

(B) Super heating

(C) Super saturation

(D) Latent heat

82. One kg of steam sample contains 0.8 kg dry steam, its dryness fraction is

(A) 0.2

(B) 0.8

(C) 1.0

(D) 0.6

83. A dense white smoke from a chimney indicates

(A) Insufficient air

(B) Too much air

(C) Less turbulence

(D) None of the above

84. The chief advantages of reheat cycle is to

(A) Increase efficiency

(B) Obtain more work

(C) Decrease moisture content in low pressure stage

(D) Increase number of turbine cylinders

85. In the impulse turbine the steam expands

(A) in the nozzle

(B) in the blades

(C) partly in nozzle and partly in blades

(D) neither in nozzle nor in blades

86. Lancashire boiler is

(A) Stationary fire tube boiler

(B) Stationary water tube boiler

(C) Mobile fire tube boiler

(D) None of the above

87. A fusible plug is fitted in small boilers in order to

(A) avoid excessive build up of pressure

(B) avoid explosion

(C) extinguish fire if water level in the boiler falls below alarming limit

(D) remove molten ash

88. An economiser in a boiler

(A) increases steam pressure

(B) increases steam flow

(C) decreases fuel consumption

(D) increases life of boiler

89. Incomplete combustion can be best judged by

(A) smoky chimney exit

(B) excess air in flue gases

(C) measuring carbon mono-oxide in flue gases

(D) measuring temperature of flue gases at exit of furnace

90. The balanced draft furnace is one using

(A) induced draft fan and chimney

(B) induced draft fan and forced draft fan

(C) forced draft fan and chimney

(D) None of the above

91. In a vapour compression cycle the vapour as it leaves the compressor is

(A) Liquid form

(B) Wet vapour

(C) Dry vapour

(D) Dry and saturated vapour

92. The defect responsible for the phenomenon of slip, by which most metals deform plastically, is known as

(A) Fracture

(B) Twining

(C) Dislocation

(D) Strain hardening

93. Malleability of a material is defined as

(A) ability to withstand compressive stresses

(B) ability to withstand deformation under shear

(C) ability to undergo large permanent deformation in compression

(D) the property by which a material can be cold worked

94. In the relation for cutting tool life $VT^n = C$, the exponent n depends on

(A) Cutting speed

(B) Machine characteristics

(C) Material to be cut

(D) Tool shape, use of cutting fluid etc.

95. Chips with built up edge are produced while machining

(A) Ductile material

(B) Brittle material

(C) Cast material

(D) Hard material

(17)

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96. In motion and time study which of the following is used in product analysis ?

(A) Process chart

(B) Work place layout

(C) Man operation chart

(D) None of the above

97. The basic tool in work study is

(A) Process chart

(B) Planning chart

(C) Bar chart

(D) Stop watch

98. Which of the following does not constitute the direct cost of a project ?

(A) Cost of materials

(B) Wages of labour

(C) Penalty imposed by government

(D) All of the above

99. ABC analysis is used in

(A) CPM

(B) PERT

(C) Inventory control

(D) All of the above

100. Under Gantt incentive plan the wages are calculated on

(A) Piece basis

(B) Group average basis

(C) Hourly basis

(D) None of the above.

(18)